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Moles Who Burrow for Microchips

How high tech has raised the stakes of Soviet espionage in the U.S.



Were it not for a few telltale antennas and a curious whitewashed rooftop coop, the handsome brick edifice in San Francisco's tony Pacific Heights could be easily mistaken for a small, posh hotel. In fact, the owner is the Soviet Union and the occupants are at least 41 Soviet officials. That is an unusually large number of diplomats for a consulate in a medium-size American city, but the Soviets did not come to the Bay Area to stamp tourist visas. About half the consular officials, the FBI estimates, are actually spies.

The Soviets bought the building for its sweeping vistas of the bay, as well as its unobstructed microwave reception. The electronic gadgetry on the roof scans the airwaves and can pluck out conversations when a computer recognizes certain words or phrases. On a clear day, the Soviets can watch Navy aircraft carriers cruising under the Golden Gate Bridge and jets taking off from the Alameda Naval Air Station to the east. But the activity that truly intrigues the Soviets is 40 miles to the south, in Silicon Valley.

There, amid the taco joints and shopping malls, are hundreds of burgeoning high-tech firms that help give the U.S. its essential—but fast shrinking—edge over the Soviets in high-technology equipment. From their high-rent spy nest in San Francisco, KGB agents fan out through the valley, looking for Americans who can be bought and secrets that can be stolen.

Moscow's hunger for high tech has transformed the ancient art of spying. No longer are the Soviets principally interested in the traditional fruits of espionage—the enemy's order of battle, troop movements and codes—even though, as the Walker case vividly demonstrates, they would dearly like to know the secrets of U.S. antisubmarine warfare. High tech has both raised the stakes and broadened the game. It has made the Silicon Valley microchips as valuable as NATO war plans, and it has made traitors out of civilian engineers as well as Navy code clerks.

Kremlin scientists cannot possibly compete with their U.S. counterparts in the race of microchips and laser beams that have increasingly become the sinews of modern warfare. The Soviets have long been able to build powerful rockets and sturdy tanks, but their home-designed computers are slow and crude. To close the gap, the Soviets have waged a

massive and successful campaign to capture America's technological wizardry. Since the late '70s, estimate U.S. intelligence experts, the Soviets have made off with 30,000 pieces of high-tech equipment and 400,000 technical documents. As a result, declares Assistant Secretary of Defense Richard Perle, they have cut the U.S. technological lead from ten years to as little as three. For the U.S. and its NATO allies, who rely on brains to beat brawn, on "smart weapons" to counter the larger Warsaw Pact forces, the high-tech drain is a factor of consequence in the precarious balance of power.

secrets. But in the 1960s, as the U.S. outmatched the Kremlin's big missiles with more accurate ones, Soviet spies were ordered by their masters to make high tech their No. 1 target. It is U.S. computer technology that the Soviets truly covet, for the ability to process masses of information in milliseconds is what makes modern weapons so deadly. Says FBI Counterintelligence Chief Ed O'Malley: "Science and technology is the KGB's largest growth industry."

Détente, with its scientific exchanges and increased East-West trade, was an enormous windfall for the Soviets. Penta-

gon officials still shake their heads over the guile of Soviet engineers who, as they toured a U.S. aircraft factory during the 1970s, would wear sticky-soled shoes to pick up metal filings. When the U.S. sent young scholars to Moscow to study Slavic languages, the Soviets exchanged "graduate students" who were often middle-age technocrats with a more than academic interest in microcircuitry. A huge truck factory built in the Soviet Kama region with U.S. financing and know-how, all acquired above-board, was put to work making the army transports that now convoy Soviet troops over the Afghanistan countryside. Far worse, grinding machines that can craft tiny ball bearings, legally sold to the Soviets by a small Vermont company in 1972, have in the estimate of U.S. intelligence experts saved the Soviets about a decade of R. and D. on improving the accuracy of their ICBMs.

Today many Soviet weapons are reasonable facsimiles if not exact duplicates of American ones. The Soviet AWACS and space shuttles are carbon copies of earlier

U.S. models. The Boeing short takeoff and landing (STOL) prototype, a breakthrough aerodynamic design, miraculously appeared just 16 months later as the Soviet AN-72. The SU-15 fighter that shot down the Korean Air Line's Flight 007 two years ago did so with a missile guidance system designed in the U.S. The Soviets do not even attempt to create their own computers anymore: the Kremlin's mainframe RIAD computer is IBM's 360 and 370 series of mainframes, right down to the color of its wires, while the Soviet AGAT personal computer is a copy of the Apple II.

The Soviets decide what to buy or steal by wading through the flood of technical journals and documents freely available in the U.S. Specialized translators at



Customs agents inspecting export-bound circuit boards
KGB spies are held to quotas just like salesmen.

The Reagan Administration has tried to limit the sale of high-tech equipment that can be put to military use and to crack down on the international "technobandits" who purchase or steal for the Soviets what they cannot directly buy. But in an open society that must trade freely with the world, the Reaganauts have about as much chance of preventing high-tech secrets from flowing out of the U.S. as they do of stopping cocaine and marijuana from flooding in.

Stealing high-tech secrets is nothing new; the Soviets have been doing it since at least the 1930s, when Communist agents made off with Western inventions like Eastman Kodak's formula for developing color pictures. In the late '40s the Russians even managed to steal atomic